

## t17\_gr\_cy\_2

(TMEvLUwL2t5Vr8tHDzAAVEctmD2ebquXwcD)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v8\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v15\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v2\_group\_1 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v1\_gr\_cy\_1 : \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k7\_group\_1 : \iota \Rightarrow \iota$  be given. Let  $r2\_group\_6 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_group\_6 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_gr\_cy\_1 : \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k7\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_card\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ & X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 \\ & X1) \wedge ((v3\_group\_1 X1) \wedge (l3\_algstr\_0 X1)))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 \\ & X2) \wedge ((v2\_group\_1 X2) \wedge ((v3\_group\_1 X2) \wedge (l3\_algstr\_0 X2)))) \Rightarrow \\ & ((r1\_group\_6 X0 X1) \wedge (r1\_group\_6 X1 X2)) \Rightarrow (r1\_group\_6 X0 X2))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v8\_struct\_0 X0) \wedge ((v15\_algstr\_0 \\ & X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ((v1\_gr\_cy\_1 X0) \wedge (l3\_algstr\_0 \\ & X0))))))) \Rightarrow (r2\_group\_6 (k4\_gr\_cy\_1 (k7\_group\_1 X0)) X0) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1.(((\neg v2\_struct\_0 X0) \wedge ((v15\_algstr\_0 X0) \wedge \\ & ((v2\_group\_1 X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))))) \wedge ((\neg \\ & v2\_struct\_0 X1) \wedge ((v15\_algstr\_0 X1) \wedge ((v2\_group\_1 X1) \wedge ((v3\_group\_1 \\ & X1) \wedge (l3\_algstr\_0 X1)))))) \Rightarrow ((r2\_group\_6 X0 X1) \Rightarrow (r2\_group\_6 X1 \\ & X0)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1.(((\neg v2\_struct\_0 X0) \wedge ((v15\_algstr\_0 X0) \wedge \\ & ((v2\_group\_1 X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))))) \wedge ((\neg \\ & v2\_struct\_0 X1) \wedge ((v15\_algstr\_0 X1) \wedge ((v2\_group\_1 X1) \wedge ((v3\_group\_1 \\ & X1) \wedge (l3\_algstr\_0 X1)))))) \Rightarrow ((r2\_group\_6 X0 X1) \Leftrightarrow (r1\_group\_6 X0 \\ & X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.((v8\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (k7\_group\_1 X0 = k7\_struct\_0 X0) \quad (5)$$

Assume the following.

$$\forall X0.((v7\_ordinal1 X0) \wedge (\neg v1\_xboole\_0 X0)) \Rightarrow ((\neg v2\_struct\_0 (k4\_gr\_cy\_1 X0)) \wedge ((v8\_struct\_0 (k4\_gr\_cy\_1 X0)) \wedge ((v15\_algstr\_0 (k4\_gr\_cy\_1 X0)) \wedge ((v2\_group\_1 (k4\_gr\_cy\_1 X0)) \wedge (v3\_group\_1 (k4\_gr\_cy\_1 X0))))))) \quad (6)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v8\_struct\_0 X0) \wedge (l1\_struct\_0 X0))) \Rightarrow ((\neg v1\_xboole\_0 (k7\_struct\_0 X0)) \wedge (v7\_ordinal1 (k7\_struct\_0 X0))) \quad (7)$$

Assume the following.

$$\forall X0.((v8\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow ((v7\_ordinal1 (k7\_struct\_0 X0)) \wedge (v1\_card\_1 (k7\_struct\_0 X0))) \quad (8)$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0) \Rightarrow (l1\_struct\_0 X0) \quad (9)$$

Assume the following.

$$\forall X0.((v7\_ordinal1 X0) \wedge (\neg v1\_xboole\_0 X0)) \Rightarrow ((\neg v2\_struct\_0 (k4\_gr\_cy\_1 X0)) \wedge ((v15\_algstr\_0 (k4\_gr\_cy\_1 X0)) \wedge (l3\_algstr\_0 (k4\_gr\_cy\_1 X0)))) \quad (10)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v8\_struct\_0 X0) \wedge ((v15\_algstr\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ((v1\_gr\_cy\_1 X0) \wedge (l3\_algstr\_0 X0))))))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge (v8\_struct\_0 X1) \wedge ((v15\_algstr\_0 X1) \wedge ((v2\_group\_1 X1) \wedge ((v3\_group\_1 X1) \wedge ((v1\_gr\_cy\_1 X1) \wedge (l3\_algstr\_0 X1))))))) \Rightarrow ((k7\_group\_1 X1 = k7\_group\_1 X0) \Rightarrow (r2\_group\_6 X1 X0)))$$